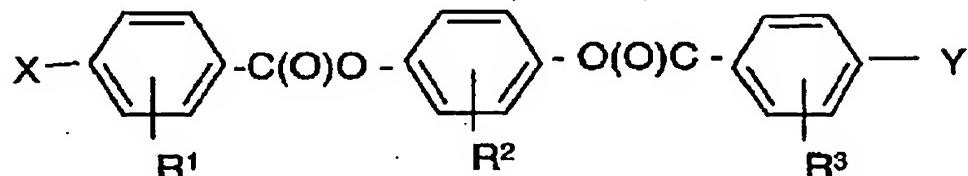


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1-173. (Canceled).

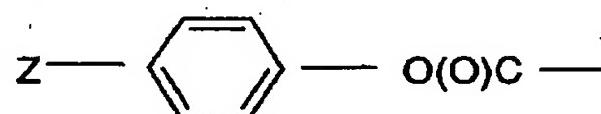
1 174. (New) Mesogens having the following formula:



2

3 wherein X and Y are spacer groups optionally further consisting essentially of terminal
4 functionalities, polymerizable groups, or combinations thereof, one or more of X
5 or Y having the following general structure:

6



7

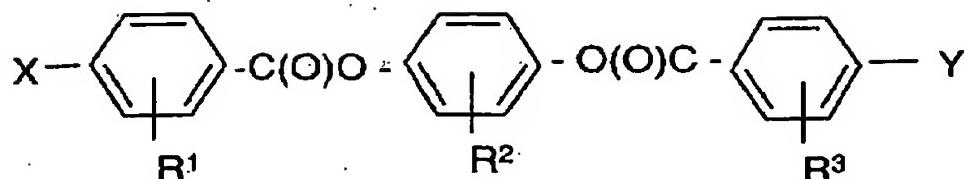
8 wherein Z is spacer group optionally further consisting essentially of terminal
functionalities, polymerizable groups, and combinations thereof;

9 R² is selected from the group consisting of alkyl groups having from about 1 to 6 carbon
10 atoms and aryl groups; and

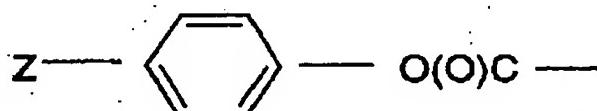
11 R¹ and R³ are selected from groups less bulky than R².

1 175. (New) The mesogens of claim 174 wherein said terminal functionalities
2 are independently selected from the group consisting of hydroxyl groups, amino groups
3 and sulfhydryl groups.

1 176. (New) Mesogens having the following formula:



4 X and Y independently are selected from the group consisting of amino groups,
5 polymerizable groups having polymerizable unsaturated carbon-carbon bond, and
6 combinations thereof, and groups having the following structure:



11 provided that when either X or Y is polymerizable group, the other of X or Y is amino
12 group and, when both X and Y are amino group, one or more of X or Y further
13 consists essentially of spacer group selected from the group consisting of H-
14 (CH₂)_n-O- groups, Cl(CH₂)_n-O- groups, Br(CH₂)_n-O- groups, I(CH₂)_n-O-, wherein
15 n is from about 2 to about 12 wherein the CH₂ groups independently are
16 optionally substituted by oxygen, sulfur, or an ester group; provided that at least 2
17 carbon atoms separate said oxygen or said ester group; and,

18 R² is selected from the group consisting of alkyl groups having from about 1 to 6 carbon
19 atoms and aryl groups.

1 177. (New) The mesogens of claim 176 wherein one or more of X, Y, or Z is
2 polymerizable group selected from the group consisting of acryloyloxy alkoxy groups

3 and methacryloyloxy alkoxy groups having an alkyl moiety having from 2 to 12 carbon
4 atoms.

1 178. (New) The mesogens of claim 177 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 12 carbon atoms wherein CH₂ groups optionally are
3 substituted by groups selected from the group consisting of oxygen, sulfur, and ester
4 groups; provided that two or more carbon atoms separate said oxygen from said ester
5 groups.

1 179. (New) The mesogens of claim 178 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 9 carbon atoms.

1 180. (New) The mesogens of claim 178 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 6 carbon atoms.

1 181. (New) The mesogens of claim 176 wherein R² is selected from the group
2 consisting of t-butyl groups, isopropyl groups, secondary butyl groups, and phenyl
3 groups.

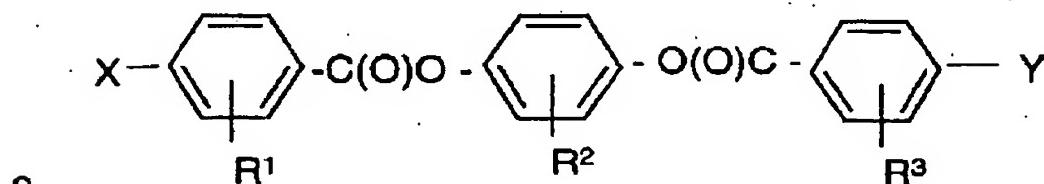
1 182. (New) The mesogens of claim 178 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 183. (New) The mesogens of claim 181 wherein R and R³ are selected from
2 the group consisting of hydrogen and a methyl group.

1 184. (New) The mesogens of claim 176 wherein one or more of X, Y, or Z
2 further consists essentially of spacer group.

1 185. (New) The mesogens of claim 184 wherein one or more of X, Y, or Z
2 further consists essentially of functionalities independently selected from the group
3 consisting of hydroxyl groups and sulfhydryl groups.

1 186. (New) Mesogens having the following formula:



3 wherein

4 X and Y independently are selected from the group consisting of amino groups,
5 polymerizable groups, and combinations thereof, provided that when X is
6 polymerizable group, Y is amino group;

7 R² is selected from the group consisting of t-butyl groups, isopropyl groups, and
8 secondary butyl groups; and

9 R¹ and R³ are selected from groups less bulky than R².

1 187. (New) The mesogens of claim 186 wherein said polymerizable groups
2 have polymerizable unsaturated carbon-carbon bond.

1 188. (New) The mesogens of claim 186 wherein said polymerizable groups are
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy
3 alkoxy groups having alkyl moiety with from 2 to 12 carbon atoms.

1 189. (New) The mesogens of claim 188 wherein said alkyl moiety consists
2 essentially of from 2 to 12 carbon atoms and CH₂ groups optionally are substituted by
3 groups selected from the group consisting of oxygen, sulfur, and ester groups; provided
4 that two or more carbon atoms separate said oxygen from said ester groups.

1 190. (New) The mesogens of claim 189 wherein said alkyl moiety consists

2 essentially of a total of from 2 to 9 carbon atoms.

1 191. (New) The mesogens of claim 189 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 6 carbon atoms.

1 192. (New) The mesogens of claim 186 wherein R and R³ are selected from
2 the group consisting of hydrogen and a methyl group.

1 193. (New) The mesogens of claim 191 wherein R and R³ are selected from
2 the group consisting of hydrogen and a methyl group.

1 194. (New) The mesogens of claim 186 wherein one or more member selected
2 from the group consisting of X and Y further consists essentially of spacer group.

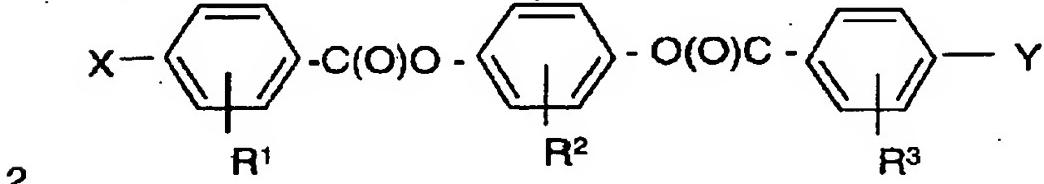
1 195. (New) The mesogens of claim 187 wherein one or more member selected
2 from the group consisting of X and Y further consists essentially of spacer group.

1 196. (New) The mesogens of claim 186 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

1 197. (New) The mesogens of claim 194 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

1 198. (New) The mesogens of claim 195 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

1 199. (New) Mesogens having the following formula:



3 wherein

4 X is polymerizable group comprising polymerizable unsaturated carbon-carbon bond;

5 Y comprises amino group;

6 R² is selected from the group consisting of alkyl groups having from about 1 to 6 carbon
7 atoms and aryl groups; and

8 R¹ and R³ are selected from groups less bulky than R².

1 200. (New) The mesogens of claim 199 wherein said polymerizable group is
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy
3 alkoxy groups having alkyl moiety with from 2 to 12 carbon atoms.

1 201. (New) The mesogens of claim 200 wherein said alkyl moiety consists
2 essentially of from 2 to 12 carbon atoms and CH₂ groups optionally are substituted by
3 groups selected from the group consisting of oxygen, sulfur, and ester groups; provided
4 that two or more carbon atoms separate said oxygen from said ester groups.

1 202. (New) The mesogens of claim 201 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 9 carbon atoms.

1 203. (New) The mesogens of claim 201 wherein said alkyl moiety consists
2 essentially of a total of from 2 to 6 carbon atoms.

1 204. (New) The mesogens of claim 199 wherein R and R³ are selected from
2 the group consisting of hydrogen and a methyl group.

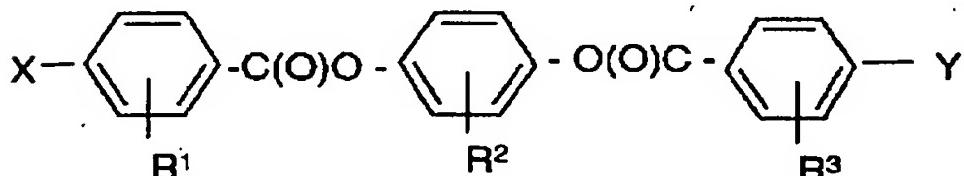
1 205. (New) The mesogens of claim 201 wherein R and R³ are selected from
2 the group consisting of hydrogen and a methyl group.

1 206. (New) The mesogens of claim 199 wherein one or more member selected
2 from the group consisting of X and Y further consists essentially of spacer group.

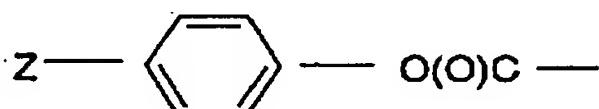
1 207. (New) The mesogens of claim 201 wherein one or more member selected
2 from the group consisting of X and Y further consists essentially of spacer group.

1 208. (New) The mesogens of claim 204 wherein one or more member selected
2 from the group consisting of X comprises cinnamoyloxy group.

1 209. (New) Mesogens having the following formula:



3 wherein X and Y independently are selected from the group consisting of spacer groups,
4 polymerizable groups, and combinations thereof, one or more member selected
5 from the group consisting of X and Y having the following structure:



7 wherein Z is selected from the group consisting of spacer groups, terminal
8 functionalities, polymerizable groups, and combinations thereof, said spacer
9 groups being selected from the group consisting of H-(CH₂)_n-O- groups,
10 Cl(CH₂)_n-O- groups, Br(CH₂)_n-O- groups, I(CH₂)_n-O-, wherein n is from about 2
11 to about 12 wherein the CH₂ groups independently can be substituted by oxygen,
12 sulfur, or an ester group; provided that at least 2 carbon atoms separate said
13 oxygen or said ester group;

14 R² is selected from the group consisting of alkyl groups having from about 1 to 6 carbon
15 atoms and aryl groups; and

16 R¹ and R³ are selected from groups less bulky than R².

1 210. (New) The mesogens of claim 209 wherein X and Y further consist
2 essentially of functionalities independently selected from the group consisting of
3 hydroxyl groups, amino groups, and sulfhydryl groups.

1 211. (New) The mesogens of claim 210 wherein n is from about 2 to 9.

1 212. (New) The mesogens of claim 210 wherein n is from 2 to 6.

1 213. (New) The mesogens of claim 209 wherein said polymerizable groups
2 have alkyl moiety having polymerizable unsaturated carbon-carbon bond.

1 214. (New) The mesogens of claim 210 wherein said polymerizable groups
2 have alkyl moiety having polymerizable unsaturated carbon-carbon bond.

1 215. (New) The mesogens of claim 214 wherein said alkyl moiety has from 2
2 to 9 carbon atoms.

1 216. (New) The mesogens of claim 214 wherein said alkyl moiety has from
2 from 2 to 6 carbon atoms.

1 217. (New) The mesogens of claim 209 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 218. (New) The mesogens of claim 210 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 219. (New) The mesogens of claim 213 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 220. (New) The mesogens of claim 214 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 221. (New) The mesogens of claim 216 wherein R² is selected from the group
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,
3 and phenyl groups.

1 222. (New) The mesogens of claim 209 wherein R and R³ are selected from
2 the group consisting of hydrogen and methyl group.

1 223. (New) The mesogens of claim 217 wherein R and R³ are selected from
2 the group consisting of hydrogen and methyl group.

1 224. (New) The mesogens of claim 220 wherein R and R³ are selected from
2 the group consisting of hydrogen and methyl group.

1 225. (New) The mesogens of claim 221 wherein R and R³ are selected from
2 the group consisting of hydrogen and methyl group.

1 226. (New) The mesogens of claim 209 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

1 227. (New) The mesogens of claim 217 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

1 228. (New) The mesogens of claim 222 wherein one or more member selected
2 from the group consisting of X and Y is cinnamoyloxy group.

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